

ABSTRACT OF THE DISCLOSURE

A heating element protection apparatus for a mass-flow sensor may include a heating element disposed in a gas, a gas temperature sensor disposed in the gas to sense a temperature of the gas, a slope detector to measure a slope of the temperature as power is supplied to the heating element, and a heating element controller to supply power to the heating element to replace heat dissipated by the gas. The heating element controller may detect a temperature of the heating element and may supply power to the heating element based on the heating element temperature and the gas temperature, and the power may be switched off for a predetermined period of time if a magnitude of the slope is greater than a reference magnitude.